SECTION 3.5: AIR QUALITY

This section discusses the potential effects that the alternatives considered in Chapter 2 would have on the air quality in the area of the DMC Unit. Information in this section was summarized from the Draft CVPIA PEIS, Air Quality, Technical Appendix, Volume 6 (Reclamation 1997e) and has been updated as appropriate for more recent changes in air quality standards.

AFFECTED ENVIRONMENT

Most of the air pollutants in the area of the DMC Unit are associated with both urban and agricultural land uses. In general, there are four basic land uses: irrigated agriculture; dryland agriculture (dry cropped, fallow, idle, or grazed land); M&I; and undeveloped (natural). The primary air pollutants include particulate matter (PM) and hydrocarbons or organic gases that may serve as ozone (O_3) precursors.

Pollutants commonly associated with agricultural land uses include particulate matter, carbon monoxide (CO), nitrogen oxides (NO_x), and ozone precursors. Particulate matter results from field burning, farm operations such as tilling, plowing, and the operation of farm equipment on loose earth, and entrained road dust releases and fuels combustion in vehicles and farm equipment. Particulate emissions may also occur when fallowed fields do not have a crop cover to inhibit wind erosion. Carbon monoxide is released to the atmosphere during field burning and fuel combustion in farm equipment. Nitrous oxides are also released during field burning. Ozone precursors are released in farm equipment emissions and during the application of pesticides and fertilizers. The effect of these practices on air quality conditions may be influenced by meteorological conditions, the variability of emissions controls, and the adoption and enforcement of emissions regulations.

Many M&I practices result in hydrocarbon and particulate matter emissions. Sources of hydrocarbon emissions include fuel combustion in vehicles and industrial equipment, painting and solvent use, and residential heating. Sources of particulate matter emissions include dust entrained in pavement, structural and automobile fires, construction and demolition, residential fuel combustion, and fuel consumption in vehicles. CVPIA actions are not anticipated to affect air pollutants associated with relatively minor urban and industrial uses in the DMC Unit. Therefore, this section focuses on potential impacts to air quality conditions that would result from changes in agricultural land uses.

The DMC Unit is located in the San Joaquin Valley Air Basin (SJVAB), which includes the southern portion of the Central Valley, including the lower slopes of the mountain

ranges. The air quality of the SJVAB is regulated by the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD), which has jurisdiction over Merced, Fresno, San Joaquin, and Stanislaus Counties. The entire SJVAB is designated nonattainment[1] with respect to federal and state ozone and particulate matter standards, and the urban area of Fresno is nonattainment for federal and state carbon monoxide standards.

ENVIRONMENTAL CONSEQUENCES

Air quality impacts that could occur are judged to be adverse if the action being evaluated causes or contributes to a violation of federal or state ambient air quality standards; increases exposure of people to air pollution in concentrations in violation of ambient standards; causes pollutant or pollutant precursor emissions in excess of local air quality management agency impact adverse thresholds; or violates federal, state, or local emission limitations for specific pollutants or emission sources. Current federal and SJVUAPCD regulations require that the project alternatives not have an adverse impact on regional air quality, as reflected by the estimated long- and short-term impacts from the direct and indirect emissions sources created by the action. The SJVUAPCD recommends the following thresholds for adverse air quality impacts:

- Reactive organic gases and NO_x should not exceed 10 tons per year.
- Complying with SJVUAPCD Regulation VIII reduces potential impacts from particulate matter emissions to less than adverse. Large or high intensity construction projects near sensitive receptors may require mitigation beyond Regulation VIII.
- The project causes or contributes to an exceedance of federal and state ambient carbon monoxide standards, as determined by screening or modeling.
- The adverse threshold for hazardous air pollutant emissions is based on the potential to increase cancer risk for the person with maximum exposure potential by 10 in one million. The non-cancer Hazard Index must be less than 1. This is to be determined by screening or modeling.
- The adverse threshold for odor impacts is based on distance of the odor source from people and complaint records for the facility or a similar facility. More than one confirmed complaint per year averaged over a three-year period or three

[1] The Clean Air Act and Amendments of 1990 define a "nonattainment area" as a locality where air pollution levels persistently exceed National Ambient air Quality Standards or that contributes to ambient air quality in a nearby area that fails to meet standards.

unconfirmed complaints per year averaged over a three-year period would be an adverse impact.

- Construction impacts have the same thresholds as above, but adverse thresholds apply only during the construction period.

NO-ACTION ALTERNATIVE

In the No-Action Alternative, agricultural land uses would include similar crops and cropping patterns as those described in the Affected Environment. It is assumed that retired or fallowed lands would be reseeded with grasses and grazed by livestock or occasionally dryland-farmed.

Very little change would be seen in either irrigated acreage from average to wet to dry water years. Actively farmed lands and fallowed lands can serve as a source of fugitive air emissions, particulate emissions, and minimal emissions from farm equipment engines. Fugitive dust emissions from irrigated lands are not substantially different from dry-farmed lands or fallow lands with a non-cultivated cover crop (Montgomery Watson 1995). Furthermore, emissions from farm equipment and transportation of agricultural materials would not substantially increase under the No-Action Alternative. Therefore, the No-Action Alternative would not result in adverse impacts to air quality.

ALTERNATIVE 1

Similar to the discussion above for the No-Action Alternative, Alternative 1 would not result in adverse impacts to air quality. Agricultural land uses would include similar crops and cropping patterns as those described in the Affected Environment. It is assumed that retired or fallowed lands would naturally revegetate, be grazed by livestock, or be occasionally dryland-farmed. Therefore, Alternative 1 would not result in adverse impacts to air quality.

ALTERNATIVE 2

As described in Table 3.2-6, 1,600 total acres could be taken out of production as a result of implementing Alternative 2 under average-wet or wet-wet hydrologic sequences, as compared to No-Action Alternative wet year conditions. This would be a short-term impact because, in the long run, hydrology would reflect average levels and long-term land fallowing could be considerably lesser in extent. The only long-term impact would be the impact resulting from comparing the total acres that could be taken out of production from implementation of Alternative 2 under the average-average hydrologic sequences, as compared to No-Action Alternative average year conditions. As described in Table 3.2-6, a total of 600 acres could be taken out of production as a result of implementing

Alternative 2 under average-average hydrologic sequences, as compared to No-Action Alternative average year conditions.

Fugitive dust could be generated from these 600 acres until native plants and grasses provide natural cover for land taken out of production. As with all impacts within the study area, the concentration of impacts to a smaller geographic area within the study area increases the relative impact, while a more uniform dispersion of impacts across the study area decreases the relative impact. It is unlikely that the amount of fugitive dust generated would constitute an adverse impact of any measurable level when considered in the context of an air basin-wide impact. To the extent that land taken out of production is concentrated in a smaller geographic area, impacts could be larger to the area directly adjacent to barren lands. In addition, fugitive dust emissions from irrigated lands are not substantially different from dry-farmed lands or fallow lands with a non-cultivated cover crop (Montgomery Watson 1995).

CUMULATIVE IMPACTS

Cumulative impacts to air quality are not expected to result from the combined effect of long-term contract renewals and past, present, and reasonably foreseeable future actions related to air quality. Growth and development decisions that indirectly affect air quality by increasing the number of vehicles and their emissions will be made independently at the local land use planning decision-making level, as discussed in Section 3.4, Land Use. The California Air Resources Board continues to pursue additional incentives to reduce air pollution from agricultural sources, including the incentives in Assembly Bill 923 recently signed by Governor Schwarzenegger. Additional California Air Resources Board programs include, but are not limited to the development of the 2004 San Joaquin Valley Ozone State Implementation Plan, which identifies the clean air strategies needed to bring the valley into attainment with the federal 1-hour ozone standard by 2010, and the implementation of Senate Bill 656 enacted in 2003, which requires the board, in consultation with air districts, to develop and adopt a list of the most readily available, feasible, and cost-effective control measures that could be employed by the board and the air districts to reduce inhalable particulate matter (PM_{10}) and the subset of fine particles ($PM_{2.5}$). The goal is to make progress toward attainment of state and federal PM_{10} and $PM_{2.5}$ standards. The proposed control measures are to be based on rules, regulations, and programs existing in California as of January 1, 2004, to reduce emissions from new, modified, or existing stationary, area, and mobile sources. As a second step, the bill requires the board and air districts to adopt implementation schedules for control measures no later than July 31, 2005. By their nature, these reasonably foreseeable future actions being pursued at different stages of implementation by the California Air Resources Board are designed to address ongoing air quality issues in the project study area.